Time to Retire: Why Americans Claim Benefits Early and How to Encourage Delay

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For screenshots of the tasks used in our studies, please refer to the online supplemental materials.
CONTRIBUTION STATEMENT

Many Americans are financially underprepared for retirement, yet they claim Social Security retirement benefits at the earliest opportunity, which substantially reduces the size of their monthly benefit. This problem has not been studied in the consumer literature, and most previous research on the claiming decision and possible interventions to encourage delaying claiming has focused on economic factors. We model the claiming decision as an intertemporal choice and apply a Query Theory process model to develop and test four choice architecture interventions. We find that display interventions changing the graphical presentation of decision-relevant information do not significantly affect preferred claiming age, but show that process interventions, which change how consumers approach the claiming decision, do produce significant delays in preferred claiming age. Our results provide tests of Query Theory, increase our understanding of this consequential decision, and add to the toolbox of possible interventions for important intertemporal choice decisions.
ABSTRACT

Most Americans are saving less for retirement, retiring earlier and living longer. Research suggests that delaying claiming Social Security retirement benefits would be a better economic decision for many. We model the claiming decision as an intertemporal choice and use a process model, Query Theory, to generate predictions. In five studies, we analyze the claiming decision and test interventions to encourage delaying claiming. Study 1 confirms that early claiming is the implicit default for many participants. In studies 2 and 3, choice architecture display interventions designed to shift the implicit default (from early to later claiming) produce non-significant delays in preferred claiming age. In studies 4 and 5, choice architecture process interventions, asking participants to frame the future first (consider thoughts favoring later claiming before thoughts favoring early claiming) or to use conceptually similar, but more practical preference checklists, produce significant delays, which are mediated by the theorized process.

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Americans are living longer, but retiring earlier (Burtless and Quinn 2002; Wise 1997). The average American now spends about 19 years in retirement—60% more time than in the 1950s (Favreault and Johnson 2010). At the same time, many Americans do not save sufficiently for retirement (EBRI 2010; NIA 2007; Thaler and Benartzi 2004). This problem is compounded by the changing nature of retirement: Individuals, rather than employers, are becoming increasingly responsible for accumulating and managing their retirement resources themselves (Dushi and Iams 2008). As a result, consumers approaching retirement age must make a decision that will affect their income for the rest of their life: When should they begin to receive Social Security (SS) retirement benefits? The claiming decision is important because SS retirement benefits are the primary source of income for more than 50% of the aged population (NIA 2007; SSA 2010). The age at which consumers claim their benefits affects the size of their monthly benefit, which will not change, except for cost of living adjustments. To apply concrete numbers to this decision, the average monthly SS retirement benefit at age 62 was about $1,000 in 2009. If the potential retiree had waited until 66, it would have been $1,333, and at 70, $1,760 (SSA 2010). In contrast, the median American family’s retirement savings, according to the 2007 Survey of Consumer Finances was $76,000, which would produce a monthly income of less than $300, using usual consumption rates. Thus, with 31 million Americans projected to retire within the next decade (Reno and Lavery 2009), this decision has important implications for consumers’ welfare, health and happiness in retirement. Similar decisions are made in most private retirement savings plans (Burman, Coe, and Gale 1999), and in retirement decisions made in other countries (Bütler and Teppa 2005).
Given the incentives to wait, it may seem surprising that almost half of all SS recipients claim their monthly retirement benefits as early as possible (Muldoon and Kopcke 2008; Song and Manchester 2007). Because claiming early significantly decreases the monthly benefit, many of these consumers bear a substantial risk that their accumulated retirement assets will not be sufficient to support their desired standard of living for the duration of their retirement, particularly if they deplete their retirement savings and have no pension. For these consumers, SS retirement benefits are their only source of support. Therefore, for many, early claiming, with its permanently reduced monthly benefit, is a suboptimal decision economically (Coile et al. 2002).

In this paper, we attempt to answer two critical questions about the claiming decision. First, how do consumers make the decision to claim benefits early, even if many of them would be better off claiming later? Second, can we encourage consumers to delay claiming using choice architecture interventions that either alter the presentation of monthly benefit information or change how decision makers process the claiming decision? Although research on retirement wealth has been dominated by traditional economic approaches (for recent exceptions, see Behaghel and Blau 2010; Brown, Kapteyn, and Mitchell 2011; Dominitz, Hung, and van Soest 2007; Knoll 2010, 2011; Liebman and Luttmer 2009), we base our analysis on two well-known and related behavioral phenomena: impatience for current rewards and the notion of preference construction. Specifically, we model the claiming decision using the behavioral economics of intertemporal choice and we use Query Theory, a specific theory of preference construction, to better understand the decision and explore interventions that may affect it. While an increasing literature in consumer research examines understanding and increasing savings in accumulation (see Goldstein, Johnson and Sharpe 2008; Mckenzie and Liersch 2011; Nenkov, Jeffrey and Hulland 2008; Hershfield et al. 2011), there is little work consumer research looking at how
consumers decide to start consuming (that is decumulate) their retirement wealth (but see Schau, Gilly and Wolfinbarger 2009 and Kumar and Shah 2011, for work on spending and investing in retirement)

The rest of this paper is structured as follows: We start by characterizing the benefit claiming decision as a constructed intertemporal choice and utilize Query Theory, a process model of constructed preferences, to generate a set of behaviorally-based hypotheses and interventions. We also describe the normative factors that affect the decision of when to claim benefits. We then describe 5 studies, involving a total of 2,779 potential SS retirement benefit recipients that test these hypotheses and interventions. We conclude by discussing the implications for the design of choice architecture.

Intertemporal Choice, Query Theory and the Claiming Decision

While most previous research on the claiming decision has focused on traditional economic predictors, claiming can also be thought of as a classic intertemporal choice problem (for an analysis of Social Security, see Knoll 2011, for more general reviews of intertemporal choice see Lynch and Zauberman 2007; Frederick, Loewenstein and O’Donoghue 2002). Individuals may claim benefits early simply because they become impatient as the early option approaches—they prefer a smaller monthly benefit sooner to a larger monthly benefit later. Thus the claiming decision may be like any other decision that involves an intertemporal tradeoff, and interventions that have been successful in promoting more patient decision-making in other contexts may also affect benefit claiming.
One model that has been applied to intertemporal choice is Query Theory, a memory-based model of preference construction (Johnson, Häubl, and Keinan 2007; Weber et al. 2007; Weber and Johnson 2011). Theories of preference construction suggest that, when considering a decision, consumers actively construct their preferences rather than simply recall stored preferences (Lichtenstein and Slovic 2006; Weber and Johnson 2009). Query Theory suggests that decision makers construct their preferences by decomposing the decision into queries about the pros and cons of the available choice options (Johnson et al. 2007; Weber et al. 2007; Weber and Johnson 2011). These queries are asked sequentially, and arguments in favor of the current best alternative (e.g., the default option or the reference point) are generated before arguments in favor of other choice options (Willemsen, Böckenholt, and Johnson 2011). Due to output interference (i.e., the effect of earlier arguments suppressing individuals’ ability to generate later conflicting arguments), retrieval for later queries is less successful (Anderson, Bjork, and Bjork 1994; Anderson and Spellman 1995; Perfect et al. 2002; Veling and van Knippenberg 2004). Thus, the current best alternative becomes the most-supported choice option and decision makers tend to decide in its favor. Query Theory has been previously applied to intertemporal choice decisions (Appelt, Hardisty, and Weber 2011; Figner et al. 2010; Weber et al. 2007), as well as a number of other decision-making phenomena, including the endowment effect (Johnson et al. 2007), attribute labeling effects (Hardisty, Johnson, and Weber 2010), and how default effects influence environmental decisions (Dinner et al. 2011).

Intertemporal choice problems are usually framed as delay decisions, where the perceived default is to choose a smaller amount sooner, but there is an option to choose a larger amount later. The benefit claiming decision does not have an explicit default—consumers must make an active choice to receive benefits, regardless of the age at which they choose to claim. However,
because it is a decision to delay gratification, we argue that many decision makers’ implicit default is claiming a smaller monthly benefit sooner (e.g., claiming reduced benefits at 62, even though there is also the option of claiming a larger monthly benefit later, such as full benefits at FRA). Query Theory posits that, when considering the claiming decision, consumers first query their memory for arguments favoring this implicit default (e.g., “my health is declining” or “I prefer early retirement”), before querying their memory for arguments favoring alternative options (e.g., “I would like to work as long as I can” or “I want my full benefits”). Thus, reasons favoring early claiming should occur earlier and be relatively more numerous than reasons favoring later claiming, and this should predict preferences for early claiming. Study 1 explores the claiming decision to test whether consumers treat early claiming as an implicit default while making their decision and whether this leads to a preference for early claiming. Subsequent studies test potential theory-based interventions, but before we can describe them, it is necessary to understand some details of the claiming decision.

The Claiming Decision

The Social Security Administration (SSA) administers multiple types of benefits (see http://www.ssa.gov/pubs/10024.pdf). Some benefits, such as disability benefits or young survivor benefits, are claimed at the time of disability onset or death. Other benefits, such as retirement benefits, require an active claiming decision. This paper focuses only on retirement benefits. The decision to claim these benefits is complex and depends upon many factors, including SSA’s rules regarding retirement benefit claiming. Benefits are available beginning at age 62, and eligible consumers can choose to begin receiving benefits at any age after this. Their
choice affects the size of their monthly benefit: SSA designates the full retirement age (FRA) as the age at which individuals receive 100% of their scheduled monthly benefit. (As per the 1983 Social Security Amendments, FRA has increased based on birth cohort so that the age for full benefits ranges from 65 to 67, depending on the individual’s year of birth (see http://www.socialsecurity.gov/retire2/retirechart.htm).) Whereas claiming benefits before FRA results in a permanently reduced monthly benefit, claiming between FRA and age 70 results in a permanently increased monthly benefit. These reductions and increases are calculated to be actuarially fair given average life expectancy; that is, if an individual lives to average life expectancy, his or her lifetime benefits will be approximately equal regardless of claiming age. Figure 1a presents an illustration (similar to those used by SSA) of a typical tradeoff between monthly benefit and age of initial claim.

For many Americans, the claiming decision is intertwined with the decision to stop working. According to SSA’s Modeling Income in the Near Term (MINT) model (SSA 2011), in 2010, 53% of consumers retiring at age 62 were projected to claim benefits within one year of stopping work. For some of these consumers, poor health status (NIA 2007), insufficient financial resources (Gustman and Steinmeier 2002), or layoffs may affect their decision to stop working. Consumers who lack sufficient retirement assets, from either pensions or personal savings, will be likely to claim benefits at the point of retirement. Although many individuals face a constrained choice, those citing poor health or job termination as reasons for early claiming cannot explain all of the observed early claiming (EBRI 2006; Song and Manchester 2007). Instead, there are many consumers who retire early because they choose to do so (EBRI 2006). It is precisely this subset of the population that interventions may target.
By providing guaranteed lifetime income to eligible consumers from the time they start collecting benefits until death, SS retirement benefits function like an inflation-protected annuity, reducing longevity risk, the risk that consumers will outlive their retirement assets. Because the decision to start claiming affects the amount of the monthly benefit, there is conceptually a unique claiming age for each individual that provides the highest lifetime benefits. This balances the increased monthly benefit against the reduction in time before claiming. (The decision is more complex for married individuals because of the implications for survivor benefits, see http://www.ssa.gov/pubs/10084.pdf.) Individual factors, including health, life expectancy, and retirement savings, should affect an individual’s claiming age. For example, individuals who are in good health and/or who expect to have a long retirement should delay claiming in order to have a larger monthly benefit later in their longer retirement. Conversely, individuals who are in poor health and/or who do not expect to have a long retirement should claim earlier. Other economic factors should also influence the claiming decision. For example, because the decision to claim a smaller monthly benefit sooner or a larger monthly benefit later is an intertemporal choice, it should be influenced by individuals’ personal discount rates. Additionally, because of the uncertainty surrounding the length of retirement and thus the amount of retirement assets needed, the claiming decision should also reflect individuals’ risk attitude. Thus, the claiming decision is affected by both psychological and economic factors.

Choice Architecture Interventions

We argue that claiming preferences are constructed (rather than stored), and that the way claiming options are presented or considered affects the construction process and the resulting
decisions. For example, changing the framing of the decision can influence consumers’ preferred claiming age. Brown et al. (2011) and Liebman and Luttmer (2009) found that highlighting the breakeven age (i.e., the unique age for each individual at which the sum of the increase in monthly benefits from delaying claiming offsets the sum of the monthly benefits forgone during the delay period) led to a large preference for early claiming, whereas describing monthly benefits as gains for delaying claiming or losses for accelerating claiming had smaller effects. Using a breakeven frame, Brown et al. (2011) accelerated claiming by 15 months (relative to baseline). In contrast, gain and loss frames only delayed claiming relative to baseline by around three months and one month, respectively. Likewise, Liebman and Luttmer (2009) found a larger effect for a breakeven frame, but also found that more people preferred later claiming in a gain frame than a loss frame.

Query Theory makes explicit one of the assumptions implicit in this previous research: Consumers’ preferences are constructed and this construction is driven by how the decision is presented, in particular how the outcomes are framed relative to a default reference point. Therefore, changing the implicit default should change consumers’ preferences. This insight suggests two choice architecture approaches to changing consumers’ implicit defaults. Display interventions, which are more passive, change the presentation of the decision (Thaler and Sunstein 2008). Process interventions, which are more active, change how consumers approach the decision (Johnson et al. 2007; Weber et al. 2007).

Display Interventions. Interventions that alter the presentation of decision-relevant information have been used to increase retirement savings. Thaler and Benartzi (2004), for example, found that reframing a reduction in current consumption (a loss) as a reduction in the
size of a future gain led to larger savings. Similarly, the interventions used by Brown et al. (2011) and Liebman and Luttmer (2009) changed, at least implicitly, the default consumers used when considering the benefit claiming decision. In previous intertemporal choice scenario studies, explicit shifts in the default have proven successful in changing behavior (Appelt et al. 2011; Weber et al. 2007), and have even been found to change the neural processing of such decisions (Figner et al. 2010). Therefore, in study 1, we explore the claiming decision and test our hypothesis that many consumers treat early claiming as an implicit default.

Based on the results from study 1, in studies 2 and 3 we attempt to shift the implicit default from early claiming toward later claiming. In study 2 we make small modification to the standard depiction of monthly benefits, and in study 3 we attempt a stronger manipulation that departs radically from the standard depiction. We begin with a graph based closely on the standard graph that SSA uses to communicate benefit information on its website (see http://www.socialsecurity.gov/pubs/10147.pdf). The graph (see figure 1a) shows the level of monthly benefit for which consumers are eligible at each age from 62 to 70. In this standard graph, the x-axis is at $0, highlighting the increase in monthly benefits for every year claiming is delayed after 62. In study 2, we shift the x-axis to $1,000 (i.e., the assumed level of monthly benefit at FRA), highlighting both the decrease in monthly benefits for each year claiming is accelerated before FRA and the increase in monthly benefits for each year claiming is delayed after FRA (see figure 1b). In study 3, the graph is redesigned (see figure 1c). First, to focus consumers on later claiming ages first, we reorient the graph so that claiming ages run along the y-axis from oldest (top) to youngest (bottom). Second, we change the monthly benefit labels from absolute amounts to amounts relative to full benefits. Third, we color-code the bars. These changes emphasize that later claiming produces a gain (positive dollar amounts and green bars).
whereas early claiming produces a loss (negative dollar amounts and red bars). These studies thus test whether shifting the x-axis (study 2) or redesigning the graph (study 3) changes consumers’ perceived default from early claiming to later claiming.

Insert figure 1 about here

Process Interventions. A second approach to changing defaults, and thereby constructed preferences, is to alter how consumers approach and make decisions. Query Theory posits that the order in which consumers consider choice options affects their eventual choice. If so, changing the order in which options are considered should change behavior. Query Theory assumes that many decisions explicitly or implicitly provide a default option and that consumers begin the choice process by considering arguments in favor of this default before considering arguments in favor of alternative options (Johnson et al. 2007). Previous research has found that asking people to consider choice options in the opposite or unnatural order eliminates the effect of the default on intertemporal choice (Appelt et al. 2011; Weber et al. 2007) as well as the endowment effect (Johnson et al. 2007).

In study 4, we apply a Query Theory-based intervention to the claiming decision. In the natural thought order condition, participants are asked to consider reasons favoring early claiming (i.e., the implicit default identified in study 1) before considering reasons favoring later claiming. In the unnatural thought order condition, this is reversed—we ask participants to consider reasons favoring later claiming before considering reasons favoring early claiming.
Study 4 tests whether this process intervention changes consumers’ perceived default from early claiming to later claiming, and whether this leads to a preference for later claiming.

In study 5, we extend this work to develop a more practical manipulation. Although soliciting reasons from consumers in certain orders is easily accomplished in the lab, it may not be ideal for real-world situations. However, presenting consumers with decision-relevant reasons and asking them whether they considered these reasons is easily doable. By sorting the reasons into preference checklists (i.e., listing reasons favoring early claiming in one group and reasons favoring later claiming in another) and varying the order in which the checklists are presented, we can still manipulate the order in which consumers consider reasons. Study 5 tests whether this more easily implemented process intervention produces a similar preference for later claiming.

To summarize, study 1 explores how consumers approach the claiming decision. In studies 2 and 3, we alter the presentation of the claiming decision to nudge participants toward later claiming. In studies 4 and 5, we use the existing choice architecture and instead change the way consumers consider the decision to encourage participants to delay claiming.

**STUDY 1**

As an exploratory study, study 1 has several purposes. First, we want to replicate survey data showing that many Americans prefer to claim benefits early (Muldoon and Kopcke 2008; Song and Manchester 2007), with spikes in the number of people claiming at 62 and FRA (Behaghel and Blau 2010; Coile et al. 2002). In other words, study 1 is designed to replicate the real-world phenomenon of early claiming in an online setting, using a sample of middle-aged
and older adults who are either already eligible for or expect to become eligible for SS retirement benefits.

**H1:** Many participants will prefer to claim early, with spikes in claiming at 62 and FRA.

If we replicate the incidence of early claiming, study 1 can begin the more important task of exploring how consumers arrive at this decision. The claiming decision is an intertemporal choice with the option for a smaller monthly benefit sooner or a larger monthly benefit later. In a delay-framed intertemporal choice, the default is to choose the smaller amount sooner. Although the claiming decision does not have an explicit default option, we hypothesize that claiming a smaller monthly benefit sooner serves as an *implicit* default option for many consumers. We argue that, despite SSA’s attempts to present benefit information neutrally, many consumers consider early claiming as their current best alternative.

**H2:** Many participants will treat early claiming as the implicit default.

Following from this, we next test whether Query Theory can explain the decision process underlying claiming preferences, an important result for informing the design of our interventions in future studies. Query Theory predicts that the ordering and relative number of thoughts favoring the implicit default (i.e., early claiming) will predict a preference for early claiming. We test this by asking participants to list their thoughts about the decision before reporting their preferred claiming age. After making their decision, participants are asked to categorize their own thoughts as favoring early claiming or favoring later claiming. Query Theory predicts that participants who provide thoughts favoring early claiming *before* thoughts favoring later claiming will show a greater preference for early claiming.
**H3:** The prominence of thoughts favoring early claiming will predict a preference for early claiming.

Lastly, we test for differences in the claiming decision as a function of eligibility—that is, do consumers who are currently eligible for benefits (i.e., consumers who are making their real decision now, whether by claiming or waiting to claim) decide differently than consumers who are not yet eligible for benefits (i.e., consumers who are only considering the decision prospectively)? Survey data indicate that consumers systematically mispredict when they will want to claim. Workers surveyed in the 2009 Retirement Confidence Survey who had not yet retired reported a median expected retirement age of 65, whereas the actual median retirement age of surveyed workers was 62 (EBRI 2009). Additionally, 47% of retired workers indicated that they had retired sooner than they had planned (EBRI 2009). In other words, consumers who are considering their future decision tend to think they will claim later than they actually do.

Furthermore, previous research has demonstrated that consumers tend to become more impulsive as retirement approaches. Using a bargaining task to identify the minimum amount a participant would accept to retire early, Bidewell, Griffin, and Hesketh (2006) found that participants who were closer to their preferred retirement age were willing to give up more money in the future in order to retire earlier. Therefore, we suggest that when consumers are not yet eligible for benefits and claiming is not yet an option (before reaching 62), they may prefer later claiming. However, once consumers become eligible and claiming becomes an option (at 62 and later), they may prefer to claim early.

The switch to earlier claiming ages as eligibility approaches is consistent with behavioral models of intertemporal choice, such as hyperbolic discounting (Kirby and Herrnstein 1995) or quasi-hyperbolic discounting (Benhabib, Bisin, and Schotter 2010; Laibson 1997; Phelps and
Pollak 1968), which suggest that consumers discount future outcomes inconsistently. These models suggest that, when consumers are presented with two options that are both in the future, they are likely to choose the larger, later amount. However, as the options approach in time, preferences reverse and consumers are likely to choose the smaller, sooner amount. This means that when consumers prospectively consider claiming (i.e., when early claiming and later claiming are both in the future), they will prefer to receive a larger monthly benefit later, but once they are eligible to claim (i.e., when early claiming is now, but later claiming remains in the future), they will prefer to receive a smaller monthly benefit sooner. Eligible consumers are subject to the temptation of early claiming in a way that consumers who are not yet eligible simply are not. Thus, we hypothesize that impatience, specifically a bias toward the present, will lead to preferences for earlier claiming for eligible consumers, but will not affect claiming preferences for not-yet-eligible consumers.

We also hypothesize that traditional, rational predictors, such as perceived longevity risk and perceived current health, will predict claiming for all participants. Consumers who perceive greater longevity risk, the risk of outliving their retirement assets, should delay claiming so that they will have a larger monthly benefit later in life, when their assets may be exhausted (Coile et al. 2002). Consumers in better health may want to delay claiming for two reasons. First, they may be financially able to delay claiming because they can continue working for longer than consumers in poor health. Indeed, research has shown that individuals are less likely to claim retirement benefits if they are still working (Gustman and Steinmeier 2002). Second, they may expect to live longer lives and thus have a longer retirement, which increases their likelihood of outliving their retirement assets. Therefore, greater perceived longevity risk and better perceived current health should both predict preferences for later claiming.
H4: Participants who are already eligible for benefits will decide differently than participants who are not yet eligible. (a) Participants who are already eligible will prefer to claim at earlier ages. (b) Impatience will predict early claiming for eligible participants only. (c) Greater perceived longevity risk and better perceived health will predict preferences for later claiming for both eligible and not-yet-eligible participants.

Method

Participants. We conducted a web-based study using a community sample provided by a market-sampling firm, Survey Sampling International, which compensated participants at their standard rates. Pre-screening tests confirmed that participants (N = 1,580) participated in good faith (i.e., paid attention and proceeded conscientiously) and were self-reported to be between 45 and 70 and either currently eligible for SS retirement benefits or expecting to become eligible for SS retirement benefits. Data from 288 (18%) participants were excluded for one of two reasons: (1) 285 participants did not complete the study, and (2) 3 participants listed numbers rather than relevant thoughts on the thought-listing task. Across the five studies, the nature and magnitude of our exclusions are typical for online research, which trades off the advantages of a more socioeconomically representative sample with the disadvantages of decreased supervision of survey completion (Hardisty & Weber 2009). Excluding data from careless participants reduces noise but does not alter major trends or conclusions. Analyses were based on data from the remaining 1,292 participants (68% female, $M_{age} = 60.17$, $SD = 6.26$). Participants came from a
range of socioeconomic backgrounds: 60% had at least a two-year college degree, 56% were married, 73% had children, and median household income was $35,000-$49,999.

Procedure. All participants were asked to imagine that they were approaching retirement and were eligible for SS retirement benefits based on their previous years of work. They then read SS retirement benefits information patterned after standard SSA materials and tailored to their cohort. Before stating their preferred claiming age, participants were asked to list their thoughts about the decision. Participants were later presented with their thoughts and asked to code them into categories. Finally, they completed demographic questions. A subset of participants (N = 390) also completed individual difference measures as part of a second session.

Claiming Decision. Benefits information was tailored to participants’ cohort (i.e., FRA of 66 or 67). Similar to information provided by SSA, both graphical and written descriptions were used to explain how claiming at different ages between 62 and 70 would affect the monthly amount participants would receive for the rest of their lives. In study 1, the graph showed the monthly benefit as a percentage of full benefits (please refer to the Online Supplemental Materials for screenshots of our tasks).

Thought Listing. As in other studies, participants did a warm-up thought-listing task to learn how to use the thought-listing interface prior to the main task. After being presented with the claiming decision, but before reporting their choice, participants were prompted to report any thoughts that went through their minds as they contemplated the decision. They listed these thoughts one by one using a type-aloud protocol (Johnson et al. 2007; Weber et al. 2007).
**Thought Coding.** After reporting their decision, participants coded each of their own previously listed thoughts as favoring early claiming (before FRA), full claiming (at FRA), delayed claiming (between FRA and age 70), or none of the above.

**Demographics.** In addition to standard demographics, participants reported their perceived risk of outliving their retirement assets (1 = extremely unlikely to 7 = extremely likely) and their perceived current health (1 = poor to 5 = excellent; adapted from the Health and Retirement Survey).

**Time Preferences.** Participants completed an adaptive questionnaire, DEEP Time (for Dynamic Experiments for Estimating Preferences; Toubia et al. 2010), which measures time preferences by assessing a quasi-hyperbolic model of discounting, representing both participants’ present bias, measured by the parameter $\beta$, and their discount fraction, measured by the parameter $\delta$. Specifically, the model estimated is of the form (Benhabib et al. 2010; Laibson 1997; Phelps and Pollak 1968):

$$U(x, t) = xd(t)$$

where

$$d(t) = \begin{cases} 
1 & \text{for } t = 0 \\
\beta \exp(-rt) & \text{for } t > 0 
\end{cases}$$

DEEP Time presents participants with 20 binary choices between a smaller, sooner amount and a larger, later amount. It starts with a choice pair drawn from a prior population distribution, and generates the most informative new choice pair based upon both a Bayesian update and prior responses. In addition, DEEP Time adjusts participants’ parameters to give more weight to their
responses when they are consistent and more weight to the prior distribution when their responses are inconsistent (for more details, see Toubia et al. 2010).

Results

Claiming Patterns. In line with observed behavior (Behaghel and Blau 2010), there were spikes in claiming at both 62 and FRA (66 or 67 in this sample; see figure 2a). Also in line with observed behavior (Muldoon and Kopcke 2008; Song and Manchester 2007), 47% of participants preferred to claim benefits early (i.e., before FRA) and 33% of participants preferred to claim benefits as early as possible (i.e., at 62) \( (M_{\text{preferred claim age}} = 65.34, SD = 2.91) \). As would be expected if consumers systematically overpredict the age at which they will want to claim benefits, this trend was less pronounced for those not yet eligible for benefits and more pronounced for those already eligible for benefits (see figure 2b). These data confirm hypothesis 1: Replicating real-world data, many participants preferred to claim benefits early.

Implicit Default. To estimate each participants’ perceived default, we used their self-coded thoughts to identify which claiming age they thought about the most: early claiming (before FRA), full claiming (at FRA), or delayed claiming (between FRA and 70). For this analysis, we excluded 212 participants who thought about two or more claiming periods equally. Confirming hypothesis 2, more participants treated early claiming as the default (51%) than full
claiming (21%) or delayed claiming (28%). In fact, perceived default and preferred claiming age were highly correlated ($r(1080) = .78, p < .001$).

**Query Theory and Claiming.** Participants listed between zero and 51 relevant thoughts ($M = 2.80, SD = 2.41$). Data from 27 participants providing only thoughts coded as “none of the above” were excluded from analyses on relevant thoughts. We measured thought clustering and order using the standardized median rank difference metric: $SMRD = \frac{2(MR_L - MR_E)}{n}$, where MR$_L$ is the median rank of thoughts favoring full or delayed claiming (i.e., at FRA or later; “later-claiming thoughts”), MR$_E$ is the median rank of thoughts favoring early claiming (i.e., before FRA; “early-claiming thoughts”), and n is the total number of relevant thoughts (Johnson et al. 2007). Positive numbers indicate participants listed early-claiming thoughts before later-claiming thoughts, whereas negative numbers indicate the opposite—participants listed later-claiming thoughts before early-claiming thoughts. Randomly distributed early-claiming and later-claiming thoughts produce a SMRD of zero (study 1: $M = -0.02, SD = 0.95$). We measured the balance of support by subtracting the number later-claiming thoughts from the number of early-claiming thoughts ($M = -0.18, SD = 2.80$). We then created a measure of the *prominence of early-claiming thoughts* by averaging the z-scores of SMRD and balance of support ($r(1265) = .65, p < .001$). Higher numbers indicate a greater prominence of early-claiming thoughts (i.e., both earlier and more thoughts favoring early claiming).

To test a Query Theory process account of preferred claiming age, we conducted a linear regression with prominence of early-claiming thoughts as a predictor. Confirming hypothesis 3, the prominence of early-claiming thoughts was highly significant ($B = -2.15, SE = 0.07, t(1263) = -32.61, p < .001, partial \ r^2 = .46$). The earlier and more thoughts participants had in favor of
claiming at early ages, the earlier they preferred to claim. We conducted a second linear regression including traditional economic factors as predictors. Participants’ thoughts were a strong predictor of preferred claiming age, even compared to traditional economic factors, such as eligibility, education, wealth, perceived longevity risk, and perceived health (see table 1).

Insert table 1 about here

Eligibility and Claiming. An independent samples t-test confirmed hypothesis 4a: participants who were eligible for benefits (\(M = 64.50, SD = 2.69\)) preferred to claim at significantly earlier ages than participants who were not yet eligible for benefits (\(M = 65.94, SD = 2.91\); \(t(1210.1) = 9.16, p < .001, \text{Cohen’s } d = .51\)).

To look at differences in what predicted claiming as a function of eligibility, we conducted separate linear regressions with standardized \(\beta\), standardized \(\delta\), standardized perceived longevity risk, and standardized perceived health as predictors (see table 1). For those not yet eligible, neither \(\beta\) nor \(\delta\) were significant predictors, but both greater perceived longevity risk and better perceived health predicted claiming at later ages (\(B = 0.55, SE = 0.20, t(221) = 2.76, p = .006, \text{partial } r^2 = .03\) and \(B = 0.42, SE = 0.20, t(221) = 2.12, p = .04, \text{partial } r^2 = .02\), respectively). For those already eligible, \(\beta\) (present bias) predicted earlier claiming (\(B = 0.47, SE = 0.23, t(159) = 2.06, p = .04, \text{partial } r^2 = .03\), but \(\delta\) (the discount fraction) was not significant. Greater perceived longevity risk marginally significantly predicted claiming at later ages (\(B = 0.40, SE = 0.20, t(159) = 1.99, p = .05, \text{partial } r^2 = .02\), but perceived health was not significant.
Supporting hypothesis 4b, impatience predicted a preference for claiming at earlier ages for eligible participants, but not for not-yet-eligible participants. Providing mixed support for hypothesis 4c, greater perceived longevity risk predicted a preference for claiming at later ages for both not-yet-eligible and eligible participants, but better perceived health only predicted a preference for later claiming for not-yet-eligible participants. In other words, for participants who were not yet eligible, traditional economic factors significantly predicted claiming preferences whereas time preferences did not. For participants who were already eligible, time preference significantly predicted claiming preferences whereas traditional economic factors were less strong predictors.

Discussion

As an initial exploration of the claiming decision, study 1 had several purposes. First, we found that many participants preferred to claim benefits early, with spikes in the number of participants preferring to claim at 62 and FRA. As in the real world, many consumers preferred early claiming despite the decreased monthly benefit accompanying this decision. Second, we found that many participants treated early claiming as the implicit default, supporting the idea that consumers approach the claiming decision as a delay-framed intertemporal choice. Third, we found evidence for a Query Theory account of the claiming decision: The order and number of participants’ thoughts favoring early claiming strongly predicted preferences for early claiming. In fact, the prominence of early-claiming thoughts was the strongest predictor of claiming preferences, even compared to traditional economic predictors. Finally, we found differences in claiming preferences depending on whether participants were already eligible for benefits or not.
Specifically, eligible participants preferred to claim earlier and were also more influenced by behavioral factors, such as impatience, than not-yet-eligible participants. Supporting hyperbolic and quasi-hyperbolic models of discounting, consumers considering their decision prospectively predicted they would claim later, but consumers considering their decision concurrently preferred to claim earlier.

Study 1 provided correlational evidence that queries and preference construction are involved in the claiming decision. For many consumers, the claiming decision is a delay-framed intertemporal choice. As suggested by Query Theory, early claiming is the implicit default, and the prominence of thoughts favoring early claiming leads to a preference for early claiming. In subsequent studies, we provide causal evidence by using different strategies to shift the perceived default and, in turn, consumers’ preferred claiming ages.

**STUDY 2**

In study 2, we test a display intervention altering the presentation of the claiming decision. Previous research on intertemporal choice has shown that minor changes in the presentation of information can shift the default option from a smaller amount now to a larger amount later, and this induces more consumers to choose the later option (Appelt et al. 2011; Weber et al. 2007). Study 1 showed that many consumers naturally treat early claiming as an implicit default. Therefore, in study 2, we revise the standard benefits information to make claiming at FRA the implicit default, with the expectation that this will induce more consumers to prefer later claiming.
Rather than modifying the written description of monthly benefits as in previous research (Brown et al. 2011, Liebman and Luttmer 2009), we modify the graphical depiction of monthly benefits. Based on the standard graph made available by SSA, we create a graph indicating the monthly benefit amount for each claiming age from 62 to 70. In the standard presentation (see figure 1a), the x-axis is at $0, emphasizing the increases in monthly benefit for every year claiming is delayed after 62. In our altered presentation (see figure 1b), the x-axis is shifted to $1,000 (i.e., the level of benefits at FRA) to emphasize both the decreases in monthly benefit for every year claiming is accelerated before FRA and the increases in monthly benefit for every year claiming is delayed after FRA. Thus, we expect FRA to become the implicit default for decision makers.

**H5:** Participants seeing the shifted-axis graph will treat later claiming as the implicit default.

If this change in the presentation of the claiming decision shifts the implicit default, we also expect the preferred claiming age to be delayed. However, Query Theory makes a more specific prediction as well: If FRA becomes participants’ implicit default, then they should have earlier and more thoughts in favor of claiming at later ages and this should result in a preference for later claiming.

**H6:** Participants seeing the shifted-axis graph (a) will prefer to claim at later ages and (b) will have less prominent thoughts favoring early claiming. (c) The effect of the manipulation on preferred claiming age will be mediated by the reduced prominence of early-claiming thoughts.

**Method**
Participants and Procedure As in study 1, we conducted a web-based study using a community sample. Pre-screening tests confirmed that participants (N = 521) met the same eligibility standards as in study 1. Data from 113 (22%) participants were excluded because they did not complete the study. Analyses were based on data from the remaining 408 participants (67% female, $M_{age} = 58.43, SD = 7.04$). As in study 1, participants came from a range of socioeconomic backgrounds: 53% had at least a two-year college degree, 53% were married, 72% had children, and median household income was $35,000-$49,999.

Participants followed the procedure from study 1 except that participants were randomly assigned to see either the standard or shifted-axis benefits graph. As in study 1, participants were presented with cohort-tailored benefits information that used both text and a graph to explain how claiming at different ages between 62 and 70 would affect the amount of benefits they would receive each month for the rest of their lives. Like the standard SSA presentation, the graph showed monthly benefit amounts in dollars. Participants were randomly assigned to see the standard axis graph (i.e., x-axis at $0$; see figure 1a) or the shifted-axis graph (i.e., x-axis at $1,000$, see figure 1b). The written description of benefits was held constant across conditions. (Due to a programming error, the graphs for studies 2 and 4 had incorrect dollar amount labels on the bars for very late claiming ages (the monthly benefit for claiming at 68 was mislabeled as $1,116$ instead of $1,160$; at 69, as $1,124$ instead of $1,240$; and, at 70, as $1,132$ instead of $1,320$). However, the height of the bars was correct, as were the dollar amounts in the accompanying text. Comparison of baseline results with study 1 (where the graph was correctly labeled) revealed no significant effect. The graphs have been corrected for the paper.)
Thought Listing, Coding, and Demographics. The thought-listing task was identical to the one used in study 1. After their decision, participants saw each of their prior statements and coded each as favoring as-early-as-possible claiming (at 62), favoring early claiming (between age 62 and FRA), favoring full claiming (at FRA), favoring delayed claiming (between FRA and age 70), or none of the above. The demographics were the same as in study 1.

Results

Implicit Default. As in study 1, after excluding 70 participants who thought about two or more claiming periods equally, we used participants’ self-coded thoughts to determine their perceived default: early-as-possible claiming (at 62), early claiming (between 62 and FRA), full claiming (at FRA), or delayed claiming (between FRA and 70). An independent samples t-test did not find support for hypothesis 5: The manipulation did not significantly shift participants’ implicit default to later claiming.

Claiming Decision. An independent samples t-test indicated that hypothesis 6a was also not supported: The manipulation did not have a significant effect on preferred claiming age. However, means were in the expected directions with participants in the shifted axis condition ($M = 65.63, SD = 2.92$) preferring to claim slightly later than participants in the standard axis condition ($M = 65.41, SD = 2.86$).
Query Theory and Claiming. Participants listed between zero and 21 relevant thoughts ($M = 2.86$, $SD = 2.17$). As in study 1, after excluding data from 10 participants who provided only “none of the above” thoughts, we created a measure of the prominence of early-claiming thoughts by averaging the highly correlated z-scores of SMRD and balance of support ($r(398) = .69$, $p < .001$). Higher numbers indicate both earlier and more thoughts favoring early claiming. An independent samples t-test did not find support for hypothesis 6b: The manipulation did not significantly decrease the prominence of early-claiming thoughts. Because hypotheses 6a and 6b were not supported, we could not test for mediation.

Discussion

A display intervention failed to significantly influence the implicit default or claiming preferences. Although the shifted-axis graph made claiming at FRA more visually prominent, the manipulation was not sufficient to significantly shift the implicit default or preferred claiming age. It is worth noting, however, that the small descriptive delay of 2.6 months that was produced is on par with that produced by Brown et al.’s (2011) textual display intervention (1-4 months). In study 3, we strengthen the manipulation by further altering the graph to draw more attention to the losses associated with early claiming.

STUDY 3

In study 3, we again test a display intervention altering the presentation of the claiming decision. This time we modify the graph in three ways (see figure 1c). First, we change the
orientation of the graph from horizontal (claiming age along the x-axis, with older ages at the right) to vertical (claiming age along the y-axis, with older ages at the top). We believe that this reorientation increase the salience of later claiming, potentially changing the default. Second, we present benefit amounts as changes relative to a full benefit at FRA, rather than as absolute amounts. Finally, we vary the color of the monthly benefits. These changes highlight increases in monthly benefit for later claiming (positive dollar amounts and green bars) and decreases in monthly benefit for early claiming (negative dollar amounts and red bars). All three changes are intended to better direct attention toward the benefits of delaying claiming, thereby shifting the implicit default to later claiming ages.

**H7:** Participants seeing the redesigned graph will treat later claiming as the implicit default.

Similar to hypothesis 6, Query Theory predicts that if claiming at FRA becomes participants’ perceived default, then participants should have earlier and more thoughts in favor of claiming at later ages and this should result in a preference for later claiming.

**H8:** Participants seeing the redesigned graph (a) will prefer to claim at later ages and (b) will have less prominent thoughts favoring early claiming. (c) The effect of the manipulation on preferred claiming age will be mediated by the reduced prominence of early-claiming thoughts.

**Method**

*Participants and Procedure.* As in studies 1 and 2, we conducted a web-based study using a community sample. Pre-screening tests confirmed that participants (N = 377) met the
same eligibility standards as in the previous studies. We excluded data from 60 (15.9%) participants who took an excessively long time (more than 50 minutes) to complete the study. Analyses were based on data from the remaining 317 participants (62.7% female, $M_{age} = 57.5$, $SD = 6.79$). Once again, participants came from a range of socioeconomic backgrounds: 56% had at least a two-year college degree, 53% were married, 69% had children, and median household income was $35,000-$49,999.

Participants followed the procedure from study 1 except that participants were randomly assigned to see either the standard or redesigned benefits graph.

As in the previous studies, participants were presented with both written and graphical benefits information tailored to their cohort. Participants were randomly assigned to see either the standard graph (see figure 1a) or the redesigned graph (i.e., the re-oriented graph with color-coded bars labeled with relative dollar amounts, see figure 1c). The written description of benefits was held constant across conditions. Thought listings, coding, and the demographics measures were the same as in study 2.

Results

*Implicit Default.* As in previous studies, after excluding 85 participants who thought about two or more claiming periods equally, we used participants’ self-coded thoughts to determine their perceived default claiming age. An independent samples t-test did not find support for hypothesis 7: The manipulation did not shift the implicit default to later claiming.
Claiming Decision. An independent samples t-test indicated that hypothesis 8a was also not supported: The manipulation did not have a significant effect on preferred claiming age. However, means were in the expected directions, with participants in the redesigned graph condition ($M = 65.29, SD = 2.93$) preferring to claim slightly later than participants in the standard graph condition ($M = 65.20, SD = 2.90$).

Query Theory and Claiming. Participants listed between zero and 22 relevant thoughts ($M = 2.92, SD = 2.04$). As in studies 1 and 2, after excluding data from 10 participants who provided only “none of the above” thoughts, we created a measure of the prominence of early-claiming thoughts by averaging the correlated z-scores of SMRD and balance of support ($r(317) = .70, p < .001$). Higher numbers indicate both earlier and more thoughts favoring early claiming. An independent samples t-test did not find support for hypothesis 8b: The manipulation did not significantly decrease the prominence of early-claiming thoughts. Because hypotheses 8a and 8b were not supported, we could not test for mediation.

Discussion

The more comprehensive display intervention failed to significantly influence the implicit default or claiming preferences. Although both the shifted-axis graph (study 2) and the redesigned graph (study 3) made claiming at FRA more visually prominent, neither manipulation was sufficient to significantly shift participants’ perceived default or preferred claiming age. Therefore, in studies 4 and 5, we test an altogether different type of choice architecture intervention, the process intervention. These interventions rely on textual, rather than graphical,
changes and are aimed at the decision process *itself*, rather than at the presentation of decision-relevant information.

**STUDY 4**

In study 4, we reverted to the standard SSA benefits information (i.e., textual and graphical descriptions of monthly benefits) but asked consumers to approach the same decision in different ways. Previous research has shown that process interventions that change how consumers approach an intertemporal choice also change consumers’ eventual choice. Specifically, in a delay-framed intertemporal choice, asking consumers to consider thoughts in favor of a larger, later amount *before* thoughts in favor of a smaller, sooner amount eliminates the effect of the default on choice (Appelt et al. 2011; Weber et al. 2007). Framing the future first encourages consumers to be more patient and choose the larger, later option over the smaller, sooner option (Figner et al. 2010). More generally, as predicted by Query Theory, asking participants to consider an alternative option before considering the current best alternative (e.g., the default option or reference point) weakens and even eliminates the effect of this option (Johnson et al. 2007).

In study 4, we apply this Query Theory-based process intervention to the claiming decision. We found in study 1 that many participants treated early claiming as the implicit default and that the order in which consumers chose to consider various claiming ages strongly predicted their eventual choice. Thus, in study 4, we directly manipulate the order in which participants consider claiming options in order to change their preferred claiming age. Specifically, participants are directed to consider choice options in the natural order (i.e.,
consider reasons favoring early claiming first and reasons favoring later claiming second) or the unnatural order (i.e., consider reasons favoring later claiming first and reasons favoring early claiming second). We expect participants in the natural order condition to replicate study 1 and treat early claiming as the implicit default, whereas participants in the unnatural order are expected to treat later claiming as the implicit default.

**H9:** Participants asked to list their thoughts in the unnatural order will treat later claiming as the implicit default.

If this process intervention shifts participants’ perceived default, we also expect their preferred claiming age to be delayed. Specifically, according to Query Theory: If later claiming becomes participants’ implicit default, then they should have earlier and more thoughts in favor of claiming at later ages and this should result in a preference for later claiming.

**H10:** Participants asked to list their thoughts in the unnatural order (a) will prefer to claim at later ages and (b) will have less prominent thoughts favoring early claiming. (c) The effect of the manipulation on preferred claiming age will be mediated by the reduced prominence of early-claiming thoughts.

**Method**

*Participants and Procedure.* As in studies 1-3, we conducted a web-based study using a community sample. Pre-screening tests confirmed that participants (N = 521) met the same eligibility standards as in the previous studies. Data from 103 (20%) participants were excluded because they did not complete the study. Analyses were based on data from the remaining 418 participants (66% female, $M_{age} = 58.62$, $SD = 7.03$). Once again, participants came from a range
of socioeconomic backgrounds: 53% had at least a two-year college degree, 56% were married, 75% had children, and median household income was $35,000-$49,999.

Participants followed the procedure from study 1 except that participants were randomly assigned to the natural or unnatural thought order condition. As in the previous studies, participants were presented with textual and graphical benefits information tailored to their cohort. In study 4, all participants were presented with the standard SSA presentation of benefits from study 2, shown in figure 1a.

Participants completed two separate thought-listing tasks. In the natural thought order condition, participants were first asked to list all of their thoughts in favor of early claiming (i.e., claiming before FRA), whether these were thoughts about why it would be good to receive benefits early or about why it would be bad to receive benefits later. They were then asked to list all of their thoughts in favor of later claiming (i.e., claiming at FRA or later), whether these were thoughts about why it would be good to receive benefits later or about why it would be bad to receive benefits early. In the unnatural thought order condition, this order was reversed—participants were first asked to list all of their thoughts favoring later claiming and then asked to list all of their thoughts favoring early claiming. The thought coding and demographic measures were the same as in studies 2 and 3.

Results

*Implicit Default.* Ninety-six participants listed the wrong type of thoughts in the first thought-listing task (i.e., listed thoughts favoring later claiming when asked for thoughts favoring early claiming, or vice versa). Although there were slightly more participants who
disregarded instructions in the unnatural order, this difference was not significant. Because these participants did not follow task instructions, we excluded their data from analyses of the manipulation. As in previous studies, after excluding 106 participants who thought about two or more claiming periods equally, we used participants’ self-coded thoughts to determine their perceived default. An independent samples t-test confirmed hypothesis 9; as shown in figure 3, participants in the unnatural thought order condition treated later claiming ages as the implicit default ($t(214) = -3.32, p = .001, \text{Cohen’s } d = .45\)).

Claiming Decision. An independent samples t-test confirmed hypothesis 10a and indicated that the manipulation was successful in delaying preferred claiming age ($t(319.9) = -2.47, p = .01, \text{Cohen’s } d = .28\). Participants who listed their thoughts in the unnatural order ($M = 65.59, SD = 2.93\) preferred to claim benefits at a later age than participants who listed their thoughts in the natural order ($M = 64.81, SD = 2.72\).

Query Theory and Claiming. Participants listed between zero and 23 relevant thoughts ($M = 4.40, SD = 2.31\). As in earlier studies, after excluding data from one participant who provided only “none of the above” thoughts, we created a measure of the prominence of early-claiming thoughts by averaging the z-scores of SMRD and balance of support ($r(321) = .25, p < .001\). Higher numbers indicate both earlier and more thoughts favoring early claiming. An independent samples t-test confirmed hypothesis 10b: The manipulation successfully reduced the
prominence of early-claiming thoughts ($t(283.1) = 25.01, p < .001, \text{Cohen's } d = 2.77$).

Participants who listed their thoughts in the unnatural order ($M = -0.62, SD = 0.53$) had less prominent thoughts favoring early claiming (i.e., more prominent thoughts favoring later claiming) than participants who listed their thoughts in the natural order ($M = 0.62, SD = 0.35$).

Supporting hypotheses 10a and 10b, the Query Theory process intervention was successful in changing participants’ thoughts and claiming preferences. Therefore, we were able to test whether the reduced prominence of participants’ early-claiming thoughts mediated the effect of the manipulation on claiming preferences. Following the steps outlined by Baron and Kenny (1986) and Shout and Bolger (2002), we performed a series of linear regressions. First, we regressed preferred claiming age onto condition (dummy coded: 0 = natural order, 1 = unnatural order), which was significant ($B = 0.80, SE = 0.32, t(319) = 2.53, p = .01, \text{partial } r^2 = .02$). Second, we regressed prominence of early-claiming thoughts onto condition, which was significant ($B = -1.25, SE = 0.05, t(319) = -24.72, p < .001, \text{partial } r^2 = .66$). Third, we regressed preferred claiming age onto condition and prominence of early-claiming thoughts. Unexpectedly, condition was significant in the opposite direction from before ($B = -1.70, SE = 0.51, t(318) = -3.31, p = .001, \text{partial } r^2 = .03$). Although this result is surprising, the net effect of the manipulation is still a delay in preferred claiming age. Importantly, and as predicted, prominence of early-claiming thoughts remained significant ($B = -2.00, SE = 0.33, t(318) = -6.01, p < .001, \text{partial } r^2 = .10$). Bootstrapping tests found significant mediation ($p < .001$). Confirming hypothesis 8c, participants asked to list thoughts in the unnatural order had later and fewer thoughts favoring early claiming and this led to a preference for later claiming.

Discussion
The process intervention successfully influenced the implicit default and claiming preferences. Asking participants to list thoughts favoring later claiming before listing thoughts favoring early claiming encouraged participants to treat later claiming as the implicit default. The process intervention also delayed preferred claiming age, an effect mediated by the (reduced) prominence of thoughts favoring early claiming. Participants asked to list thoughts in the unnatural order had earlier and more thoughts favoring later claiming and this led to a preference for later claiming. Interestingly, a process intervention based on Query Theory proved to be more successful than either of our display interventions. The process intervention led to a delay in preferred claiming age of, on average, 9.4 months, which is especially substantial when compared to the effects of various economic variables (for a short discussion, see Brown et al. 2011). Study 4 suggests that process interventions that direct consumers to frame the future first are a promising approach to nudging consumers toward later claiming. In study 5, we test a conceptually similar, but perhaps easier to implement, process intervention

**STUDY 5**

Although the manipulation we used in study 4 was certainly effective, it could be challenging to implement in practice. Consumers may perceive being asked to list their thoughts as effortful, intrusive, and invasive. In study 5, we explore another possible intervention that may have a similar effect on the how consumers approach the claiming decision. Instead of asking consumers to generate their own thoughts, we present them with two *preference checklists*, lists of claiming-related thoughts provided by participants in study 4 (see table 2). Participants are
asked to peruse the lists and report whether or not each thought was something they would consider when deciding their own preferred claiming age.

Checklists are often recommended as a decision aid because they remind people of procedures they may have forgotten (e.g., for surgeons or pilots; Gawande 2009). We hypothesize that checklists may also prompt an externally-guided Query Theory-style decision process. Instead of internally generating a series of queries in response to a decision, decision makers presented with a preference checklist may ask themselves a series of queries cued by the reasons provided (e.g., “Is this reason something that will affect my decision?”). If consumers are provided with multiple lists (e.g., a list of reasons favoring early claiming and a list of reasons favoring later claiming), then because of output interference, reasons on the first list will be more accessible than those on the second. This should lead to a decision in line with the reasons in the first list. Further, differences in list item accessibility, as measured by the average time required to consider (and decide whether to check off) a reason, should mediate any effects of list order on the resulting decision.

In study 5, we present participants with preference checklists in either the natural order (i.e., reasons favoring early claiming first and reasons favoring later claiming second) or the unnatural order (i.e., reasons favoring later claiming first and reasons favoring early claiming second). We expect checklist order to influence participants’ perceived default. Similar to study 4, we expect participants in the natural order condition to treat early claiming as the implicit default, and participants in the unnatural order to treat later claiming as the implicit default. Then, following from Query Theory: If later claiming becomes participants’ implicit default, reasons favoring claiming at later ages should be more accessible, and this should result in a preference for later claiming.
**H11:** Participants presented with the unnatural order checklist (a) will prefer to claim at later ages and (b) will respond more quickly to reasons favoring later claiming. (c) The effect of checklist order on preferred claiming age will be mediated by the difference in response times to the two lists.

Method

*Participants and Procedure.* As in studies 1-4, we conducted a web-based study using a community sample. Pre-screening tests confirmed that participants (N = 398) met the same eligibility standards as in the previous studies. Data from 54 (13%) participants were excluded because they did not participate conscientiously: (1) They checked either “Yes” for all list items or “No” for all list items, or (2) they spent less than 3 seconds per-item for all 16 checklist items. Analyses were based on data from the remaining 344 participants (54.9% female, $M_{age} = 57.5$, $SD = 6.83$). Once again, participants came from a range of socioeconomic backgrounds: 56% had at least a two-year college degree, 52% were married, 71% had children, and median household income was $35,000-$49,999. The demographic questions were the same as in previous studies. Participants followed the procedure from study 1 except that participants were randomly assigned to the natural or unnatural checklist order condition.

As in the previous studies, participants were presented with textual and graphical benefits information tailored to their cohort. In study 5, all participants were presented with the standard SSA presentation of benefits from study 2, shown in figure 1a.

*Preference Checklists.* Participants were shown two 8-item checklists, one containing reasons favoring early claiming and the other containing reasons favoring later claiming.
Checklist items were based upon an analysis of the most frequently listed thoughts provided by participants in study 4 (see table 2). Each item was presented separately, and participants were asked to indicate whether they would consider that reason when deciding the age at which they would like to claim benefits. Participants could answer “Yes”, “No”, or “I don’t know.”

Results

Claiming Decision. An independent samples t-test confirmed hypothesis 11a and indicated that the manipulation was successful in delaying preferred claiming age ($t(342) = -2.00$, $p = .04$, Cohen’s $d = .22$). Participants who saw the checklists in the unnatural order ($M = 65.91, SD = 2.83$) preferred to claim benefits at a later age than participants who saw the checklists in the natural order ($M = 65.28, SD = 2.96$).

Checklist Response Times. Due to output interference, reasons on the first checklist seen by participants should be more accessible, and thus processed faster, than reasons on the second checklist. To test whether participants responded more quickly to reasons in the first checklist, we first summed the average response time (log-transformed) for each item within the two lists. We then created a linear mixed-effects model (to account for variance within participant) predicting the sum of these times, as a function of checklist type (claim-early vs. claim-later), checklist order (natural vs. unnatural), and their interaction. There was a significant main effect of list type ($B = 0.04, SE = 0.01, t(344) = 6.50, p < .01$, Cohen’s $d = .32$), but no main effect of natural vs. unnatural order. However, the interaction is of primary interest ($B = 0.09, SE = 0.01, t(344) = -16.00, p < .001$, Cohen’s $d = .36$). Descriptively, this interaction shows (consistent with
hypothesis 11b) that participants responded to the first checklist \((M = 55.40 \text{ seconds})\) quicker than the second \((M = 66.71 \text{ seconds})\), average across checklist type.

Supporting hypotheses 11a and 11b, the checklist intervention was successful in changing participants’ response times and claiming preferences. Therefore, we were able to test whether this difference in response times mediated the effect of checklist order on claiming preferences. To do so, we subtracted the average response time for the claim-early checklist from the average response time for the claim-later checklist. We then conducted a mediation analysis using the difference in response times as the mediator. First, we regressed preferred claiming age onto condition (dummy coded: 0 = natural order, 1 = unnatural order), which was significant \((B = -0.29, SE = 0.16, t(341) = -1.85, p = .03\), one tailed, \(partial r^2 = .01\)). Second, we regressed difference in response times onto condition, which was significant \((B = 0.18 SE = 0.01, t(341) = 16.00, p < .001, partial r^2 = .18\)). Third, we regressed preferred claiming age onto condition and difference in response times. Condition was no longer a significant predictor \((B = -0.04, SE = 0.21, t(342) = -0.20, p > .05)\), but difference in response times remained marginally significant \((B = -1.43, SE = 0.77, t(342) = -1.85, p = .06 partial r^2 = .03)\). Bootstrapping tests indicated that the difference in response times fully mediated the relationship between order and preferred claiming age \((p = .04)\). Confirming hypothesis 11c, participants presented with checklists in the unnatural order responded more quickly to thoughts favoring later claiming and this led to a preference for later claiming.

Discussion

An implementation-friendly process intervention successfully influenced participants’ claiming preferences. Asking participants to consider a claim-later checklist before a claim-early
checklist delayed preferred claiming age, an effect mediated by the greater accessibility of the claim-later checklist. Participants asked to peruse checklists in the unnatural order responded more quickly to reasons favoring later claiming and this led to a preference for later claiming. Study 5 indicated that a more straightforward process intervention can still delay preferred claiming age. Manipulating preference checklist order led participants to delay their preferred claiming age by, on average, 7.6 months. Thus, both of our process interventions led to delays in preferred claiming age of over half a year.

**GENERAL DISCUSSION**

The National Commission on Fiscal Responsibility and Reform (2010), also known as the Simpson-Bowles Commission, suggested that SSA use behavioral economics approaches to encourage consumers to delay benefit claiming. Our research uses an intertemporal choice framework and a Query Theory process model to understand how Americans approach the benefit claiming decision and to design interventions to encourage consumers to delay claiming. Study 1 confirms that many participants prefer to claim reduced benefits before full retirement age, despite economic costs. Further, a substantial proportion of participants treat early claiming as the implicit default. Study 1 also indicates that preferred claiming age is a constructed preference that can be explained by a Query Theory process story: The earlier and more thoughts participants have in favor of claiming at early ages, the earlier they prefer to claim benefits. Additionally, the prominence of early-claiming thoughts is a stronger predictor of preferred claiming age than traditional economic factors. These insights led to the development of two types of choice architecture interventions. In studies 2 and 3, display interventions that change
the graphical depiction of monthly benefits lead to non-significant delays in preferred claiming age of, at best, 2.6 months. In study 4, however, a process intervention that alters the order in which participants consider claiming options leads to a significant delay in preferred claiming age of, on average, 9.4 months. Finally, in study 5, we test a more practical process intervention: asking participants to simply peruse preference checklists in different orders significantly delays preferred claiming age by, on average, 7.6 months.

To illustrate the impact of these interventions, figure 4 shows the effect of our four interventions, along with two interventions examined by Brown et al. (2011). The figure makes another point as well: Choice architecture is never neutral. Until a few years ago, SSA personnel computed prospective beneficiaries’ breakeven ages, in an attempt help consumers with their claiming decision. However, as can be seen in figure 4, Brown et al. demonstrated that this information accelerates claiming by 15 months, although this was not necessarily SSA’s intention. In 2008, SSA revised its description of benefits information to no longer focus on breakeven ages (see http://oig.ssa.gov/sites/default/files/audit/full/pdf/A-08-10-20183_7.pdf). Even so, SSA’s more recent description of benefits leads many participants in study 1 to treat early claiming as the implicit default. Given that all presentations of benefits information will influence preference construction and choice in one direction or another, it is imperative that interventions be well informed. Our studies, in fact, suggest the more general point that understanding how consumers make decisions is a key prerequisite for designing interventions. Such process understanding is particularly valuable when it leads to interventions that may be effective in changing behavior.

Although both display and process interventions are important parts of the choice architecture toolbox, they have different strengths and weaknesses. On the one hand, display
interventions tend to require very little effort on the part of decision makers; in fact, these interventions often work best when consumers make their decisions automatically (Johnson and Goldstein 2011). Process interventions require more (although by no means exorbitant) effort from decision makers, as they must alter their decision-making process to some degree. On the other hand, display interventions tend to be very specific and need to be applied separately to each decision. For example, re-arranging grocery store displays to encourage healthier eating does not help consumers save more for retirement. In contrast, process interventions may be more like a skill that, once learned, can be generalized. Training consumers to consider the opposite first is a general skill that can apply to many situations, whether it’s considering healthy food options before considering junk food options or considering saving for tomorrow before considering spending today. With their different strengths, display interventions and process interventions can be used to complement and reinforce each other in helping consumers to make better choices in many different arenas, including retirement benefit claiming.

A recent extensive study of the effect of framing upon claiming age concludes “some individuals may not make fully rational optimizing choices when it comes to choosing a claiming date” (Brown et al. 2011). We agree, but offer a more extensive characterization of the problem as well as a more specific diagnosis. For many consumers, the claiming decision is constructed and potentially influenced both by the presentation of benefits information and by the process adopted to make a choice. Consistent with this notion, 22% of consumers first think about the retirement decision only a year before they retire, and another 22% first think about it only six months before (EBRI 2008). If this is true, the assumption that the claiming decision is driven solely by standard economic factors is both misleading and limiting. Instead, policy-makers’ use of tools, like those presented here, stand to greatly enhance consumer welfare among retirees.
REFERENCES


Tables

Table 1

Predictors of Preferred Claiming Age for All Participants, Not-Yet-Eligible Participants Only, and Eligible Participants Only, Study 1

<table>
<thead>
<tr>
<th>Predictor</th>
<th>Preferred Claiming Age</th>
<th>All Participants</th>
<th>Not-yet-eligible Participants</th>
<th>Eligible Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td></td>
<td>65.65*** .20</td>
<td>65.64*** .27</td>
<td>65.06*** .28</td>
</tr>
<tr>
<td>Prominence of early-claiming thoughts</td>
<td>-1.99*** .07</td>
<td>-2.03*** .10</td>
<td>-1.91*** .11</td>
<td></td>
</tr>
<tr>
<td>Eligibility (dummy coded)</td>
<td>-0.55*** .14</td>
<td>--</td>
<td>--</td>
<td></td>
</tr>
<tr>
<td>Female (dummy coded)</td>
<td>0.10 .14</td>
<td>0.12 .21</td>
<td>0.05 .20</td>
<td></td>
</tr>
<tr>
<td>Married or living together (dummy coded)</td>
<td>0.05 .15</td>
<td>0.15 .21</td>
<td>-0.07 .21</td>
<td></td>
</tr>
<tr>
<td>Retirement plan (dummy coded)</td>
<td>-0.32† .17</td>
<td>-0.42† .23</td>
<td>-0.15 .24</td>
<td></td>
</tr>
<tr>
<td>Standardized education</td>
<td>0.22** .07</td>
<td>0.27** .10</td>
<td>0.15 .10</td>
<td></td>
</tr>
<tr>
<td>Standardized household income</td>
<td>0.08 .08</td>
<td>0.11 .11</td>
<td>0.03 .13</td>
<td></td>
</tr>
<tr>
<td>Standardized retirement savings</td>
<td>-0.05 .08</td>
<td>-0.08 .12</td>
<td>-0.02 .11</td>
<td></td>
</tr>
<tr>
<td>Standardized perceived longevity risk</td>
<td>0.35*** .07</td>
<td>0.37*** .11</td>
<td>0.32** .10</td>
<td></td>
</tr>
<tr>
<td>Standardized perceived health</td>
<td>0.12† .07</td>
<td>0.07 .10</td>
<td>0.18† .09</td>
<td></td>
</tr>
</tbody>
</table>

Note. The dependent variable was preferred claiming age (62-70).

a $N = 971$. b $N = 555$. c $N = 416$.

† $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$
### Table 2

Preference Checklists, Study 5

<table>
<thead>
<tr>
<th>List</th>
<th>Item</th>
<th>Text</th>
</tr>
</thead>
<tbody>
<tr>
<td>FAVORING EARLY CLAIMING</td>
<td>1</td>
<td>&quot;I want to collect benefits as soon as possible because Social Security may run out of money soon.&quot;</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>&quot;I don’t want to have to work until I’m old—I want to enjoy some non-work time with friends and family.&quot;</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>&quot;My family does not have a history of living long, so I don’t expect to live a long time either.&quot;</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>&quot;I don't like my job anymore, so claiming benefits now would let me leave that bad situation.&quot;</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>&quot;Instead of waiting until 70 years old to get the highest benefits, it is best to claim early and invest the money.&quot;</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>&quot;Waiting to claim benefits does not increase the check that much, so it’s not worth waiting.&quot;</td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>&quot;My spouse has already retired, and we would like to spend as much time as possible together in retirement.&quot;</td>
</tr>
<tr>
<td></td>
<td>8</td>
<td>&quot;Due to the economy and scarcity of jobs, I might be forced to start collecting early.&quot;</td>
</tr>
<tr>
<td>FAVORING LATER CLAIMING</td>
<td>1</td>
<td>&quot;Since people usually need more money to spend on medical bills as they get older, I’ll delay claiming as long as possible—that way I’ll have more money when I’ll probably need it most.&quot;</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>“I will probably work part-time as the years go on—that way I can put off collecting my benefits.&quot;</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>&quot;My family has a history of living long, so I expect to live a long time too—I wouldn’t want to run out of money when I'm old.&quot;</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>&quot;I want to work as long as I physically can—only health problems would stop me from working.&quot;</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>&quot;As long as I am doing something I really like, I want to keep working past my full retirement age.&quot;</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>&quot;Social Security is the best annuity out there, and waiting longer to collect gets you more money and makes it even better.&quot;</td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>&quot;I’ve been paying into Social Security my whole life, and now I want to get as much money back as possible.&quot;</td>
</tr>
<tr>
<td></td>
<td>8</td>
<td>&quot;I am comfortable with my current income level, so I can afford to delay claiming as long as possible.&quot;</td>
</tr>
</tbody>
</table>
MONTHLY BENEFIT AMOUNT AS A FUNCTION OF CLAIMING AGE, ASSUMING A FULL BENEFIT OF $1,000 AT A FULL RETIREMENT AGE OF 66: (A) THE STANDARD GRAPH USED IN STUDIES 2-5, (B) THE SHIFTED-AXIS GRAPH, USED IN STUDY 2, AND (C) THE REDESIGNED GRAPH, USED IN STUDY 3.
Monthly Benefit You Would Receive at Full Retirement Age

$1,000 per Month

← Decrease Below $1,000  ■  Increase Above $1,000 →
FIGURE 2

PERCENT OF PARTICIPANTS PREFERING TO CLAIM RETIREMENT BENEFITS AT EACH AGE FROM 62 TO 70 (A) BY FULL RETIREMENT AGE (66 VS. 67) AND (B) BY BENEFIT STATUS (NOT YET ELIGIBLE VS. ELIGIBLE), STUDY 1.
FIGURE 3

PERCENT OF PARTICIPANTS TREATING EACH PERIOD AS THE IMPLICIT DEFAULT, BY CONDITION (NATURAL ORDER VS. UNNATURAL ORDER), STUDY 4.
FIGURE 4

EFFECT OF DIFFERENT INTERVENTIONS ON PREFERRED CLAIMING AGE, RELATIVE TO BASELINE. NEGATIVE NUMBERS INDICATE EARLIER CLAIMING AND POSITIVE NUMBERS INDICATE LATER CLAIMING.

Change in Months, Relative to Control

Breakeven Frame (Brown et al. 2011)
Gain Frame (Brown et al., 2011)
Shifted Axis Graph (study 2)
Redesigned Graph (study 3)
Order Manipulation (study 4)
Preference Checklist (study 5)
Appendix: To Be Available as Online Supplemental Materials

Screenshots of Study Materials

Screenshot of Study 1 Claiming Decision

This is the task seen by participants with an FRA of 66. Participants with an FRA of 67 saw the same task, but with ages and percent changes appropriate for their cohort.
Collecting Social Security Benefits.

In this part of the study, we will ask you to think about, and express your thoughts about, collecting Social Security benefits.

Please consider the following scenario:

Imagine that you are approaching retirement and eligible for Social Security benefits based on your previous years of work. As you consider collecting benefits, you have 3 options:

1. You may begin collecting benefits at full retirement age (age 66).
2. You may begin collecting benefits early (ages 62-65).
3. You may begin collecting benefits late (ages 67-70).

As shown below, the size of your benefits depends on the age at which you begin collecting them.

**Full Retirement Age:** If you begin collecting benefits at age 66, you will receive 100% of your benefits. In other words, you will receive a monthly check for 100% of your benefits each month for the rest of your life.

**Early Retirement:** If you begin collecting benefits before age 66, your benefits will be reduced based on the number of months early that you begin collecting. For example, if you collect benefits at age 62, you will receive 75% of your benefits. In other words, you will receive a monthly check for 75% of your benefits each month for the rest of your life.

**Delayed Retirement:** If you begin collecting benefits after age 66, your benefits will be increased based on the number of months late that you begin collecting. For example, if you collect benefits at age 70, you will receive 124% of your benefits. In other words, you will receive a monthly check for 124% of your benefits each month for the rest of your life.

Screenshots of Study 2 Claiming Decision

These are the tasks seen by participants with an FRA of 66. Participants with an FRA of 67 saw the same tasks, but with ages and percents appropriate for their cohort.

*Standard X-Axis Condition (x-axis at $0).*
Social Security Retirement Benefits.

In this part of the study, we will ask you to think about, and express your thoughts about, receiving Social Security retirement benefits.

Please consider the following scenario:

Imagine that you are approaching retirement and eligible for Social Security retirement benefits based on your previous years of work. As you consider receiving benefits, you have 3 options:

1. You may begin receiving benefits at full retirement age (age 66).
2. You may begin receiving benefits early (ages 62-65).
3. You may begin receiving benefits late (ages 67-70).

As shown below, the size of your monthly benefit depends on the age at which you begin receiving benefits. This example assumes a benefit of $1,000 at a full retirement age of 66.

<table>
<thead>
<tr>
<th>Age you choose to start receiving benefits</th>
<th>Size of monthly benefit</th>
</tr>
</thead>
<tbody>
<tr>
<td>62</td>
<td>$750</td>
</tr>
<tr>
<td>63</td>
<td>$800</td>
</tr>
<tr>
<td>64</td>
<td>$870</td>
</tr>
<tr>
<td>65</td>
<td>$930</td>
</tr>
<tr>
<td>66</td>
<td>$1,000</td>
</tr>
<tr>
<td>67</td>
<td>$1,080</td>
</tr>
<tr>
<td>68</td>
<td>$1,160</td>
</tr>
<tr>
<td>69</td>
<td>$1,240</td>
</tr>
<tr>
<td>70</td>
<td>$1,320</td>
</tr>
</tbody>
</table>

Full Retirement Age: If you begin receiving benefits at age 66, you will receive 100% of your benefits. In other words, you will receive a monthly check for 100% of your benefits each month for the rest of your life. In the example above, you would receive a monthly check for $1,000 (not including cost-of-living adjustments) each month for the rest of your life.

Early Retirement: If you begin receiving benefits before age 66, your benefits will be reduced based on the number of months early that you begin receiving. For example, if you collect benefits at age 62, you will receive only 75% of your benefits. In other words, you will receive a monthly check for 75% of your benefits each month for the rest of your life. In the example above, you would receive a monthly check for $750 (not including cost-of-living adjustments) each month for the rest of your life.

Delayed Retirement: If you begin receiving benefits after age 66, your benefits will be increased based on the number of months late that you begin receiving. For example, if you collect benefits at age 70, you will receive 132% of your benefits. In other words, you will receive a monthly check for 132% of your benefits each month for the rest of your life. In the example above, you would receive a monthly check for $1,320 (not including cost-of-living adjustments) each month for the rest of your life.

Shifted X-Axis Condition (x-axis at $1,000).
Social Security Retirement Benefits.

In this part of the study, we will ask you to think about, and express your thoughts about, receiving Social Security retirement benefits.

Please consider the following scenario:

Imagine that you are approaching retirement and eligible for Social Security retirement benefits based on your previous years of work. As you consider receiving benefits, you have 3 options:

1. You may begin receiving benefits at full retirement age (age 66).
2. You may begin receiving benefits early (ages 62-65).
3. You may begin receiving benefits late (ages 67-70).

As shown below, the size of your monthly benefit depends on the age at which you begin receiving benefits. This example assumes a benefit of $1,000 at a full retirement age of 66.

**Full Retirement Age:** If you begin receiving benefits at age 66, you will receive 100% of your benefits. In other words, you will receive a monthly check for 100% of your benefits each month for the rest of your life. In the example above, you would receive a monthly check for $1,000 (not including cost-of-living adjustments) each month for the rest of your life.

**Early Retirement:** If you begin receiving benefits before age 66, your benefits will be reduced based on the number of months early that you begin receiving. For example, if you collect benefits at age 62, you will receive only 75% of your benefits. In other words, you will receive a monthly check for 75% of your benefits each month for the rest of your life. In the example above, you would receive a monthly check for $750 (not including cost-of-living adjustments) each month for the rest of your life.

**Delayed Retirement:** If you begin receiving benefits after age 66, your benefits will be increased based on the number of months late that you begin receiving. For example, if you collect benefits at age 70, you will receive 132% of your benefits. In other words, you will receive a monthly check for 132% of your benefits each month for the rest of your life. In the example above, you would receive a monthly check for $1,320 (not including cost-of-living adjustments) each month for the rest of your life.

Screenshots of Study 3 Thought Listing Task
Natural Thought Order Condition.

Your Thoughts About Receiving Retirement Benefits EARLY

Before you indicate your preference, we would like you to first think about all of the reasons you would want to receive benefits early (before full retirement age).

This includes thoughts about:

- why it would be good to receive benefits early (before full retirement age),
- why it would be bad to receive benefits later (at full retirement age or later).

Please list any thoughts that would favor receiving benefits early. Please enter your thoughts one at a time. For your reference, the information about benefits reappears below.

Please type your first complete thought in the box below and, as soon as you are done, hit the "Enter" key to submit your thought.

Thought 1: 
(Maximum of 200 characters per thought.)

Thank you.

Now that you have listed all of the reasons you would want to receive benefits early, we would like you to think about all of the reasons you would want to receive benefits later (at full retirement age or later).

Click here to continue.

Your Thoughts About Receiving Retirement Benefits LATER

Please think about all of the reasons you would want to receive benefits later (at full retirement age or later).

This includes thoughts about:

- why it would be good to receive benefits later (at full retirement age or later),
- why it would be bad to receive benefits early (before full retirement age).

Please list any thoughts that would favor receiving benefits later. Please enter your thoughts one at a time. For your reference, the information about benefits reappears below.

Please type your first complete thought in the box below and, as soon as you are done, hit the "Enter" key to submit your thought.

Thought 1: 
(Maximum of 200 characters per thought.)
Unnatural Thought Order Condition.

Your Thoughts About Receiving Retirement Benefits LATER

Before you indicate your preference, we would like you to first think about all of the reasons you would want to receive benefits later (at full retirement age or later).

This includes thoughts about:

- why it would be good to receive benefits later (at full retirement age or later).
- why it would be bad to receive benefits early (before full retirement age).

Please list any thoughts that would favor receiving benefits later. Please enter your thoughts one at a time. For your reference, the information about benefits reappears below.

Please type your first complete thought in the box below and, as soon as you are done, hit the "Enter" key to submit your thought.

Thought 1: ____________________________
(Maximum of 200 characters per thought.)

Thank you!

Now that you have listed all of the reasons you would want to receive benefits later, we would like you to think about all of the reasons you would want to receive benefits early (before full retirement age).

Click here to continue

---

Your Thoughts About Receiving Retirement Benefits EARLY

Please think about all of the reasons you would want to receive benefits early (before full retirement age).

This includes thoughts about:

- why it would be good to receive benefits early (before full retirement age).
- why it would be bad to receive benefits later (at full retirement age or later).

Please list any thoughts that would favor receiving benefits early. Please enter your thoughts one at a time. For your reference, the information about benefits reappears below.

Please type your first complete thought in the box below and, as soon as you are done, hit the "Enter" key to submit your thought.

Thought 1: ____________________________
(Maximum of 200 characters per thought.)